EMODnet Thematic Lot n°1 - Bathymetry

EASME/EMFF/2019/1.3.1.9/Lot1/SI2.836043

Start date of the project: 20/12/2020 - (24 months)

EMODnet Phase IV – Quarterly Progress Report (2)

Reporting Period: 1/04/2021 – 30/6/2021

Contents

Disclaimer

1. Highlights in this quarter

- **Task 1 - Gather and give access to bathymetric survey data**:
  During the reporting period, the number of survey data sets has increased slightly from 30723 to 30812 CDI entries while the number of Composite DTM entries has continued at 207. Gathering and population of new survey data sets will accelerate soon as part of the new contract for which it is planned to bring in many new data sets in the period till September 2021. This will also concern survey data sets, composite DTMs and Satellite Derived Bathymetry (SDB) files for the Caribbean Sea region, which has been added as a new region for EMODnet Bathymetry.

  Task 2 - Compile a multi-resolution digital terrain model of European seas:
  Task 2 activities by data providers for processing and pregridding new survey data sets and composite DTMs using the GLOBE software will start in September 2021 with a training workshop, also to be joined by the regional coordinators, to refresh how to use GLOBE software and to give instructions on the upgraded functionality of GLOBE. The preparation of data input by data providers for the regional DTMs will continue till end 2021, so that the regional coordinators can work on the compilation and generation of the 12 regional DTMs early 2022 till summer 2022. While, integration and publication of the new 2022 EMODnet DTM is then planned in the period after summer 2022 till end 2022. Activities by data providers for additional HR-DTMs are planned to take place in the first half of 2022.

  Deltares will update and refine the best-estimate European digital coastlines for the 3 vertical levels. This concerns further optimizing of the applied methodology, the GTSM tidal model, and introducing use of new data sources, such as the ICESat-2 satellite. It This will also include preparing best-estimate coastlines for selected islands in the Caribbean Sea region.

  Deltares will also maintain the inventory of national baselines and coastlines, that has been compiled and published for the previous contract. It is planned to reach out to all countries which have not yet made available their official coastline and legal baseline. These remaining countries are countries which have no representatives in the current EMODnet Bathymetry consortium.

  Finally, Deltares and CNR-ISMAR will establish a high-resolution tidal bathymetry for the Venice Lagoon and surroundings in the Northern part of the Adriatic Sea. These intertidal areas have a great influence on the tidal energy dissipation and improving bathymetry in these areas can be very beneficial for improving hydrodynamic models.

  Upgrading of GLOBE software is well underway by IFREMER, following a list of requirements as collected from consortium members, based upon earlier experiences during the previous contract. The upgrading also includes refining of the interpolation algorithms as developed by CORONIS, that are integrated in GLOBE. Furthermore, IFREMER will work on making the Collaborative Virtual Environment (CVE) at the DATARMOR HPC facility fit for visualising and inspecting regional DTMs by regional coordinators as a way for improving the regional DTM workflow. This is planned to be ready by November 2021 so that regional coordinators can then start to review and annotate the latest regional 2020 DTMs for anomalies and other issues for improvement.

- **Task 3 - Develop procedures for machine-to-machine connections to data and data products:**
  The present EMODnet Bathymetry portal and its services have many features for providing a gateway to data, metadata and data products. These are combined with web services, such as OGC services for sharing map layers of the EMODnet DTM and sharing locations and metadata of survey data sets (CDI service) and composite DTMs (Sextant catalogue service). In the new contract, there is a migration planned from thematic portals to one central portal, which will become the one-stop-shop for EMODnet products and services. While, thematic groups will continue to be responsible for the gathering of data sets, generation of their products and the provision of web services and API's which will feed the EMODnet central portal. To find a suitable solution for this migration challenge, there is regular contact between the EMODnet Central Portal team and a technical team from EMODnet Bathymetry since early January 2021. In the reporting period a further 3 technical meetings with the EMODnet Central Portal team have taken place, at 9th April 2021, 21st May 2021, and 24th June 2021. to discuss the migration and monitor how specific features of EMODnet Bathymetry can be fitted in. An important aspect is that EMODnet

Bathymetry has several added functionalities in its map viewer that should come back in the central portal map viewer service in order not to go down in functionality and user satisfaction. Moreover, use is made of the established SeaDataNet CDI and Sextant services, which will continue to perform in the new situation for data discovery and access, and thereby will be considered as external systems, supporting EMODnet. While, the data products will be included in the central products catalogue and download service, together with their associated metadata. There is good alignment of all 3 parties (Central Portal team, EMODnet Bathymetry team, EU DG-MARE and CINEA) on the way forward. For the central products catalogue, it is planned to make use of ERDDAP and also benefit from ERDDAPs options for data format conversions. However, this conversion functionality cannot be taken for granted as EMODnet Bathymetry makes use of a range of dedicated formats and versions of its data products. The ERDDAP software will have to be expanded for this, which will require extra development and testing, while as alternative a start could be made with including all existing DTM and HR-DTM data files in the central catalogue.

Unfortunately, so far, no insight has been given by the Central Portal team in the new site map for EMODnet Bathymetry at the Central Portal, while this is required on short term to prevent surprises or misunderstandings.

Also, there are still many developments needed for a full migration. Therefore, EMODnet Bathymetry hopes that sufficient time will be given to the process of finetuning as it is very important that the launch of the new Central Portal will go without major flaws.

The migration process and set-up has been reported to the full EMODnet Bathymetry consortium during its kick-off meeting from 7th to 9th April 2021.

- **Task 4 - Contribute data, data products and content to a central portal that allows users to find, view and download data and data products:**
  This will be a follow-up from the migration activities as described above under Task 3. A start has been made with preparing and handing over a set of XML metadata files for describing DTM tiles. This will be followed by XML metadata files for HR-DTM files. Both types will be integrated in the data products catalogue service at the central portal. Once operational, there will be an update with every new release of the EMODnet DTM and its HR-DTMs, which currently happens each 2 years.

- **Task 5 - Contributing content to dedicated spaces in Central Portal:**
  The CP team has indicated to set-up dedicated spaces at the Central Portal for each thematic group, whereby there will be later a joint maintenance by CMS in a staging process. Earlier, EMODnet Bathymetry had prepared a full copy, both in HTML and as database of texts, images, and documents, to the EMODnet Secretariat for preparing a site map, and taking over information for the Bathymetry thematic space at the Central portal. However, so far no insight has been given in the actual deployment and new site map, other than oral information that the process is well underway and quite challenging in several aspects due to Europa domain constraints. EMODnet Bathymetry expects to be consulted for further progress and final publishing overtime. Once operational, EMODnet Bathymetry team will then provide new and updated content, where required and appropriate.

- **Task 6 - Ensure the involvement of regional sea conventions:**
  There are good relationships with the secretariats of the Regional Sea Conventions who are kept up-to-date of the EMODnet Bathymetry services and products, and where possible, engaged in wider promotion and contributing to mobilising more potential data providers.

- **Task 7: Contribute to the implementation of EU legislation and broader initiatives for open data:**
  The consortium consists of organisations that have relevant international networks and are well acquainted with international cooperation, also aiming at international interoperability. This includes relationships concerning standards such as: ISO, OGC, INSPIRE, SeaDataNet, IHO, IOC, and ODIP. It also includes relationships concerning collection and sharing of metadata, data and DTMs such as: GEBCO, IBCAO, BSBD, NSBD, NOAA-NCEI as part of Galway declaration. Leading partners of the consortium are involved in SeaDataCloud, Blue-Cloud, EOSC, and other European digital initiatives and projects, and are interacting with these developments, to the benefits of EMODnet Bathymetry. This can be done by presentations at conferences and workshops, by dedicated meetings, and by joint projects. Considering the major experience and adoption of EMODnet Bathymetry of Satellite Derived Bathymetry, tidal bathymetry, and complexity of coast – land interfaces,

EMODnet Bathymetry will also strive for synergy and cooperation with CMEMS, combining digital bathymetry, topography, and hydrodynamic models for exploring joint initiatives, for instance for dynamic coasts. In this respect, also EMODnet Geology will be interested. Synergy could lead to uptake of the EMODnet DTM in CMEMS models.

Members of the EMODnet Bathymetry consortium have been involved in meetings jointly organised between EMODnet thematic lots and Copernicus Marine Services to foresee collaborations between both groups on possible joint products. This was also a major theme during the recent EMODnet Jamboree which took place in the week from 14th to 18th June 2021. A potential axis of convergence identified by CMEMS concerns the estimation of bathymetric depth for coastal areas from satellite information. EMODnet Bathymetry emphasised and acknowledged that it already is undertaking major efforts for many years integrating both in-situ (single and multibeam sensor data) and remote sensing data (LIDAR, satellite data) and its national bathymetry expertise as national hydrographic services and hydrographic research departments to generate and provide coastal bathymetry as accurate as possible. CMEMS has issued a questionnaire to explore interest of users in possible additional products, which results are being awaited by EMODnet Bathymetry for further discussion.

EMODnet Bathymetry members are regularly discussing technical matters with GEBCO / Seabed 2030 counterparts. EMODnet Bathymetry has released its latest version of the full DTM during the GEBCO / Seabed 2030 "Map the gaps" conference week, illustrating the ongoing intense collaboration between the two groups. As before done for the previous grid, the 2020 EMODnet full DTM will be included in the next release of the GEBCO grid to be generated in mid-2021. Thanks to the delivery of web services, the inventory of worldwide bathymetric data held by the IHO Data Centre for Digital Bathymetry, has been automatically updated with new datasets from the EMODnet contribution. Promotion of EMODnet at different IHO related commission has raised interest for new data providers to join the group. Discussion is notably undergoing with the Icelandic Coast Guard, the Spanish Hydrographic Service, and Estonia.

INSPIRE compliance for all EMODnet Bathymetry OGC web services, both from the CDI service and the Bathymetry Viewing and Download service components is satisfied. The latest validation by the EMODnet Secretariat indicates that EMODnet Bathymetry now has a full score. This will be maintained.

Also, the metadata and data gridding methodology developed as part of EMODnet Bathymetry has been successfully adopted by Chinese colleagues as part of EMOD-PACE project.

- **Task 8 - Monitor quality / performance and deal with user feedback:**

  The overall performance of the portal and its services is continuously measured and its results are reported in the separate indicators spreadsheet. It demonstrates that the Bathymetry portal and its services and products continue to be highly popular and in great demand for a wide range of user applications. Also, several user feedback questions were received and answered by the helpdesk. The user questions received and answered are detailed in chapter 3 and Annex 1.

- **Task 9 - Maintain the existing thematic web portal for a maximum of six months from the start of the project:**

  As always, activities are undertaken for maintaining the existing EMODnet Bathymetry portal. Considering the status of the migration process, it is expected that the period of maintenance of the thematic portal will exceed 6 months.

- **Project management:**

  The coordinator and technical coordinator prepared the 1st quarterly progress report for the new contract which was accepted by EU (CINEA and DG MARE).

  As follow-up to the signing of the new contract by EU and Shom, valid from 20 December 2020 for 2 years period, all partners have agreed with the new consortium agreement for consortium partners and subcontracts for subcontractors. The final signatures were received on 18th May 2021. The Project Kick-off meeting and associated Training Workshop was held over 3 half days from 7 to 9 April 2021 as remote sensions to discuss the overall approach and organisation of differents tasks of the project and the respective participations of all the consortium members.

Status of the Milestones and Deliverables listed in the workplan				
Milestone/Deliverable	WP	Date due	Status (Delivered/Delayed)	If Delayed: reason for delay and expected delivery date
D1.1: Quarterly concise progress reports	WP1	M4, M7, M10, M13, M16, M19, M24,	M4 and M7 delivered	
D1.2: Annual Interim report	WP1	M12		
D1.3: Final report	WP1	M24		
D1.4: Plan for service continuity, incl. docs and sources	WP1	M24		
D2.1: Upgraded guidelines for data pre-processing and population of metadata	WP2	M3	M4 delivered	
D2.2i: Training Workshop for data pre-processing and metadata population	WP2	M3	M4 delivered	
D2.3: Pre-processed survey data sets and included in CDI Service	WP2	M12	Striving for M8-M9	
D2.4: Pre-processed composite DTMs and included in Sextant service	WP2	M12	Striving for M8-M9	
D2.5: Satellite Derived Bathymetry data sets and included in Sextant Service	WP2	M12	Striving for M8-M9	
D3.1: Upgraded guideline of EMODnet methodology for DTM production, including using prototype CVE	WP3	M8		
D3.2i: Upgraded Globe software	WP3	M8		
D3.3i: Training and intercalibration Workshop	WP3	M11	Planned in M9	
D3.4i: Processed and pre-gridded data sets as input for RDTMs	WP3	M14	Striving for M12	
D3.5i: Regional DTMs with common resolution of 1/16 arc minutes grid	WP3	M17		
D3.6i: Best version HR DTMs for coastal waters and hotspots	WP3	M20		
D3.7: New EMODnet DTM incl Quality Index and	WP3	M23		

loaded in EMODnet web services for viewing and downloading				
D3.8: HR-DTMs loaded as separate layer in EMODnet web services for viewing and downloading	WP3	M23		
D3.9: Source reference layer to link to CDI and Sextant Catalogue services	WP3	M23		
D3.10: Refined best-estimate European digital coastlines for a range of vertical levels at the portal	WP3	M22		
D3.11: Updated Inventory of existing and ratified baselines and registered claims / disputes under UNCLOS, for European countries at the portal	WP3	M20		
D3.12: Tidal bathymetry for Venice Lagoon	WP3	M23		
D4.1: Standard machine- to-machine services delivered for common functionalities	WP4	M3	M1 delivered	
D4.2: Dedicated machine-to-machine services adapted / delivered for special functionalities	WP4	M6	As part of the migration process, scripts have been shared with Central Portal team.	
D4.3i: CVE adapted for handling review of RDTMs	WP4	M14	Striving for M11	
D4.4i: Globe software + GGSGC workbench upgraded with extra functionality	WP4	When required		
D5.1: Operational Help-desk	WP5	continuously		
D5.2: Monitoring data about visits and usage	WP5	continuously		
D5.3: Promotional material and up-to-date thematic space at central portal	WP5	continuously		
D5.4: Presentations at relevant conferences	WP5	regularly		

Note: deliverables indicated with *Dx.xi* are internal deliverables which will not be published externally nor handed over to EU as project deliverables.

2. Identified issues: status and actions taken

A. Priority issue(s) identified and communicated by CINEA/ DG MARE/ SECRETARIAT				
Priority issue	Status (Pending/Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved
EM-162 Issue in information display for the mean depth in multi-colour layer	Pending	Reaching full OGC compliancy. Also refer to EM180. As it is intermittent, both tickets are in review	22/02/2021	03/05/2021 (last action)
EM-140 and EM-169 Bathymetry Quality of Service Monitoring	Continuous	EMODnet Bathy conforms to Service Requirements	20/01/2021	-
EM-180 Inconsistent WMS layer name for EMODnet DTM	Resolved	Intermittent issue, Geoserver service restarted. Problem seems to be resolved	29/03/2021	30/03/2021
EM-188 Adding the URL to the metadata as an attribute field in the Bathymetry source Reference layer	Resolved	Consider using the present logic which is already embedded in the current URL	12/04/2021	28/04/2021
EM-231 Bathymetry - Update of Data Protection Notices (see EM-299)	Resolved	Implemented changes as prescribed	14/06/2021	3/06/2021
EM-247 Bathymetry – Banner update -deadline extension	Resolved	Implemented date changes	02/07/2021	06/07/2021

A. Issues / challenges identified by the thematic assembly group itself				
Priority issue / challenge	Status (Pending/Resolved)	Action(s) taken / remaining actions planned	Date due	Date resolved

3. User feedback (Contact Us form, online chat & other communication means)

Overview of user feedback and/or requests received in this quarter							
Date	Organisation	Type of user feedback (e.g. technical, case study, etc.) and short description of the feedback received	Means of contact	Response time	Status of user query: resolved/pending	Measures taken to resolve the query	Status: if not (yet) resolved/pending, explain reason why and expected timeline
12 April 2021	Research Institute, UTM CSIC, Spain	Question about availability of Baselayer as WMS	Email feedback form	Same day	Resolved	Explanation given that baselayer is only given as WMTS	
16 April 2021	Universidade Tecnica do Atlantico, Cabo Verde	Question about formats for DTM tiles	Email feedback form	Same day	Resolved	Explained which formats are available	
16 April 2021	UCC, Ireland	Question about referencing specific data sets	Email feedback form	Same day	Resolved	Explained how to reference using Sextant URLs	
16 April 2021	?, Tunesia	Question about legend	Email feedback form	Next day	Resolved	Explained how to use the legend	
19 April 2021	?, Netherlands	Question about DTM with MSL	Email feedback form	Same day	Resolved	Explained which format has MSL	

4 May 2021	Company, Svasek, Netherlands	Remark about issues with MSL – LAT in Channel	Email feedback form	Same day	Ongoing	Indicated that this will be resolved	
12 May 2021	?, Spain	Question about coordinate systems	Email feedback form	Same day	Resolved	Explained how to convert using specific software	
12 May 2021	UALG, Portugal	Question about Vertical Reference in DTM	Email feedback form	Two days later	Resolved	Explained that there is LAT and MSL	
20 May 2021	Company, TechnicFMC, ?	Question about ESRI format	Email feedback form	Next day	Resolved	Explained how grid is defined	
23 May 2021	Company, ?, United KIngdom	Question about DTM exports	Email feedback form	Two days later	Resolved	Explained how OGC WFS works	
25 June 2021	Company, Intertidalstrategies, Netherlands	Question about data originators from industry	Email feedback form	Two days later	Resolved	Explained how CDI metadata can be used	

4. Meetings/events held/attended & planned

[Organisational meetings/events held/participated (incl. presentations, lectures, trainings, demonstrations, workshops, etc.) by the contractant since the last quarterly report and planned in the future. Please add a short description on the meeting as well as the nature and volume of the audience.

When listing a meeting, please indicate whether it was an internal (i.e. within your partnership/lot) or external meeting (i.e. outside your partnership/lot).]

A. Meetings/events organised and attended					
Date	Location	Type event (internal or external meeting, training/workshop)	Indicate if a ppt was given (yes/no + short description)	Meeting attended (A) / organised (O)	Short description and main results (# participants, agreements made, etc.)
7-9/04/2021	Remote	EMODnet Bathymetry Kick off meeting	Yes – mutilples PPT describing the project and each of the working packages	O	Inform the approx. 50 participants on the objective and activities of the new phases/agenda of the project.
9/04/2021	Remote	EMODnet Central portal and Bathymetry meeting	No	A	Discussing progress of migration and how suggestions/requirements from EMODnet Bathymetry are taken over
12-14/04/2021	Remote	International Conference on Marine Data and Information Systems (IMDIS)	Yes – pre-recorded presentation	A	General presentation to the audience of the conference
19-21/04/2021	Remote	EMODnet Steering Committee and Technical Working Group	Yes – PPT (project status)	A	Giving information on project status and progress.
27/04/2021	Remote	North Sea Hydrographic Commission	Yes	A	General presentation to the members of the commission
21/05/2021	Remote	EMODnet Central portal and Bathymetry meeting	No	A	Discussing progress of migration and how suggestions/requirements from EMODnet Bathymetry are taken over
14/06/2021	Remote	EMODnet Jamboree and various side meetings	Yes – pre-recorded presentation	A	General presentation to the audience of the conference

24/06/2021	Remote	EMODnet Central portal and Bathymetry meeting	No	A	Discussing progress of migration and how suggestions/requirements from EMODnet Bathymetry are taken over
SUM				**O**	**Total # of meetings organised =1**
SUM				**A**	**Total # of meetings attended = 7**

B. Meetings/events planned in the future				
Date	Location	Type event (meeting, training (workshop), etc.)	Meeting to be attended (A) / organised (O)	Short description and main expected outcomes
7/09/2021	Remote	GLOBE Workshop	O	Internal meeting aiming at updating consortium users with new functionalities available in the GLOBE software
End July / beginning August	Remote	EMODnet Central portal and Bathymetry meeting	A	Discussing progress of migration and how suggestions/requirements from EMODnet Bathymetry are taken over

5. Communication assets

[List all the relevant communication and dissemination products and assets you have developed since the start of the project phase (provide date) (e.g. brochures, videos, press releases, newsletters, blogs) and are planning to do. At the bottom of the table, provide a total number for every type of communication product you have developed (e.g. total # of press releases, etc.) or provide a summary from the actions on Twitter from (e.g. Twitter Analytics: number of Tweets and followers of Twitter account).]

A. Communication products				
Date	Communication material	Short description (of the material, title, …) of the asset	Main results	Name of event at which material was disseminated (if applicable)

B. Planned communication products			
Date	Communication material	Short description (of the material, title, …) and/or link to the asset	Main results expected

List of known publications using EMODnet data or data products				
Date	Type and name of journal, conference, …	Publication title including DOI (if known)	Author(s)	Organisation(s)
04/2021	*Chapter in: Second World Ocean Assessment*	Marine invertebrates.	Jørgensen, L. L., Arvanitidis, C., Birchenough, S. N., Clark, M. R., Silva Cruz, I. C., Cunha, M., ... & Vandepitte, L.	United Nations.
04/2021	*Frontiers in Earth Science*	Probabilistic Assessment of Slip Rates and Their Variability Over Time of Offshore Buried Thrusts: A Case Study in the Northern Adriatic Sea. https://doi.org/10.3389/feart.2021.664288	Panara, Y., Maesano, F. E., Amadori, C., Fedorik, J., Toscani, G., & Basili, R.	Università di Pavia,Italy
04/2021	*Marine Policy*	The use of a spatial model of economic efficiency to predict the most likely outcomes under different fishing strategy scenarios. https://doi.org/10.1016/j.marpol.2021.104499	Vilela, R., Pennino, M. G., Rodriguez-Rodriguez, G., Ballesteros, H. M., & Bellido, J. M.	Instituto Español de Oceanografía, Spain
04/2021	*Marine Geophysical Research*	Oceanographic control of the submarine landslides of the northern Galicia Area (Bay of Biscay, NE Atlantic). https://doi.org/10.1007/s11001-021-09433-1	León, R., Martínez-Carreño, N., García-Gil, S., Rengel, J. A., Giménez-Moreno, C. J., & Reguera, I.	Instituto Geológico y Minero de España
04/2021	*Geosciences*	Dynamics of Stone Habitats in Coastal Waters of the Southwestern Baltic Sea (Hohwacht Bay https://doi.org/10.3390/geosciences11040171	von Rönn, G. A., Krämer, K., Franz, M., Schwarzer, K., Reimers, H. C., & Winter, C.	Institute of Geosciences, Kiel
04/2021	*Environmental Research Communications*	Characterising industrial thermal plumes in coastal regions using 3-D numerical simulations.	Faulkner, A., Bulgin, C. E., & Merchant, C. J.	University of Reading
04/2021	*PloS one*	Spatial heterogeneity of Pelagia noctiluca ephyrae linked to water masses in the Western Mediterranean. https://doi.org/10.1371/journal.pone.0249756	Pastor-Prieto, M., Bahamon, N., Sabatés, A., Canepa, A., Gili, J. M., Carreton, M., & Company, J. B.	Institut de Ciències del Mar
04/2021	*Frontiers in Earth Science*	Unraveling past submarine eruptions by dating lapilli tuff-encrusting coralligenous (Actea volcano, NW Sicilian Channel). https://doi.org/10.3389/feart.2021.664591	Lodolo, E., Renzulli, A., Cerrano, C., Calcinai, B., Civile, D., Quarta, G., & Calcagnile, L.	Istituto Nazionale di Oceanografia e di Geofisica Sperimentale
05/2021	*ArWiv Preprint*	Non-deterministic effects in modelling the tidal currents in a high-energy coastal site. https://doi.org/10.31223/X55G7F	Warder, S., Kramer, S. C., & Piggott, M. D.	Imperial College

05/2021	*Tectonophysics*	Subduction related faults and sedimentary basins: The Western Ionian Sea case. https://doi.org/10.1016/j.tecto.2021.228943	Proietti, G., Conti, A., Cuffaro, M., Esestime, P., & Bigi, S.	Sapienza Università di Roma
05/2021	*Acta Geophysica*	Post-event field observations in the İzmir–Sığacık village for the tsunami of the 30 October 2020 Samos (Greece) M w 6.9 earthquake. https://doi.org/10.1007/s11600-021-00582-w	Aksoy, M. E.	Muğla Sıtkı Koçman Üniversitesi, Turkey
05/2021	*Biological Invasions*	Macroalgae niche modelling: a two-step approach using remote sensing and in situ observations of a native and an invasive Asparagopsis. https://doi.org/10.1007/s10530-021-02554-z	Casas, E., Fernandez, M., Gil, A., Yesson, C., Prestes, A., Moreu-Badia, I., ... & Arbelo, M.	Universidad de la Laguna, Spain
05/2021	*Journal of Applied Ecology.*	Auditory impairment from acoustic seal deterrents predicted for harbour porpoises in a marine protected area. https://doi.org/10.1111/1365-2664.13910	Findlay, C. R., Aleynik, D., Farcas, A., Merchant, N. D., Risch, D., & Wilson, B.	Scottish Association for Marine Science
05/2021	*ICES Journal of Marine Science*	Drivers and implications of change in an inshore multi-species fishery https://doi.org/10.1093/icesjms/fsab083	Henly, L., Stewart, J. E., & Simpson, S. D.	University of Exeter
05/2021	*Earth-Science Reviews*	The Strait of Messina: Seismotectonics and the source of the 1908 earthquake. https://doi.org/10.1016/j.earscirev.2021.103685	Barreca, G., Gross, F., Scarfì, L., Aloisi, M., Monaco, C., & Krastel, S. (2021	Università di Catania, Italy
05/2021	*Pure and Applied Geophysics*	Long Tsunami Oscillations Following the 30 October 2020 Mw 7.0 Aegean Sea Earthquake: Observations and Modelling. https://doi.org/10.1007/s00024-021-02761-8	Heidarzadeh, M., Pranantyo, I. R., Okuwaki, R., Dogan, G. G., & Yalciner, A. C.	Brunel University London
05/2021	*Geosciences*	The Santorini-Amorgos Shear Zone: Evidence for Dextral Transtension in the South Aegean Back-Arc Region, Greece. https://doi.org/10.3390/geosciences11050216	Tsampouraki-Kraounaki, K., Sakellariou, D., Rousakis, G., Morfis, I., Panagiotopoulos, I., Livanos, I., ... & Papatheodorou, G.	University of Patras
05/2021	*Tectonophysics*	Thermal evolution of onshore West Iberia: A better understanding of the ages of breakup and rift-to-drift in the Iberia-Newfoundland Rift. https://doi.org/10.1016/j.tecto.2021.228926	Barbarand, J., Marques, F. O., Hildenbrand, A., Pinna-Jamme, R., & Nogueira, C. R.	Université Paris-Saclay,

05/2021	*Journal of Archaeological Science*	Satellite-derived bathymetry for maritime archaeology: Testing its effectiveness at two ancient harbours in the Eastern Mediterranean. https://doi.org/10.1016/j.jasrep.2021.103030	Westley, K.	Ulster University
05/2021	*Frontiers in Marine Science*	Mediterranean Coral Provinces as a Sponge Diversity Reservoir: Is There a Mediterranean Cold-Water Coral Sponge Fauna?. https://doi.org/10.3389/fmars.2021.662899	Santín, A., Grinyó, J., Uriz, M. J., Lo Iacono, C., Gili, J. M., & Puig, P.	Institut de Ciències del Mar
05/2021	*International Council for the Exploration of the Sea (ICES). ICES Scientific Report*	Working Group on Nephrops Surveys (WGNEPS ;outputs from 2020). https://doi.org/10.17895/ices.pub.8041	Aristegui-Ezquibela, M., Aguzzi, J., Burgos, C., Doyle, J., Fallon, N., Fifas, S., Jónasson, J., Jonsson, P., Lundy,M., Martinelli, M., Masmitja, I., McAllister, G., Medvešek, D., Naseer, A., Reeve, C., Silva, C., Simon, J.,Vacherot, J-P., Vigo-Fernandez, M., ... Wieland, K.	ICES
06/2021	*TechRxiv. Preprint.*	Going offshore or not: Where to generate hydrogen in future integrated energy systems?. https://doi.org/10.36227/techrxiv.14806647.v2	Gea Bermúdez, J., Koivisto, M. J., Kitzing, L., Ramos, A., & Pedersen, R. B. B.	Technical University of Denmark
06/2021	*Marine Geology*	Late Pleistocene iceberg scouring in the north-eastern Baltic Sea, west of Estonia. https://doi.org/10.1016/j.margeo.2021.106537	Karpin, V., Heinsalu, A., & Virtasalo, J. J.	Estonian Transport Administration
06/2021	*Marine Ecology Progress Series*	A verified distribution model for the lesser sandeel Ammodytes marinus. https://doi.org/10.3354/meps13693	Langton, R., Boulcott, P., & Wright, P. J.	Marine Scotland Science
06/2021	*D-3-3 Metallogeny of hydrothermal deposits in European waters – MINDeSEA project (H2020 project)*	Seabed Mineral Deposits in European Seas: Metallogeny and Geological Potential for Strategic and Critical Raw Materials.	Schiellerup, H.	Geological Survey of Norway
06/2021	*Thesis*	Wave climatology and extreme value analysis in coastal waters of Greek sea areas with application to Sounio nearshore region.	Mosiou, K.	National Technical University of Athens
06/2021	*Seismological Research Letters*	Historical Earthquake Scenarios for the Middle Strand of the North Anatolian Fault Deduced from Archeo-Damage Inventory and Building Deformation Modeling. https://dx.doi.org/10.1785/0220200278	Yacine Benjelloun, Julia Sigoyer (de), Hélène Dessales, Laurent BailletGueguen, P., & Sahin, M.	Institut de Physique du Globe

06/2021	*Ecological indicators*	Beyond connecting the dots: A multi-scale, multi-resolution approach to marine habitat mapping. https://doi.org/10.1016/j.ecolind.2021.107849	Van Der Reijden, K. J., Govers, L. L., Koop, L., Damveld, J. H., Herman, P. M., Mestdagh, S., ... & Olff, H.	University of Groningen

6. Monitoring indicators

Comments on the progress indicators in the excel template		
Progress indicator	Means of collecting figures	Comment
1. Current status and coverage of total available thematic data A) Volume and coverage of available data	Matomo/ other (Please state which monitoring tool was used to collate the information in each case)	For CDIs, most population had already been done in the previous quarters as there was an input deadline considering the production of new regional DTMs and new EMODnet DTM which was released in January 2021. The increase is part of completing source references for the new released DTM. The new project has started and data providers are tasked with populating new data sets in the first 9 months. This should become visible in the next quarterly reports.
B) Usage of data in this quarter		Considerable decrease in number of downloaded CDIs compared to previous quarter. Also number of users decreased from 52 in previous quarter to 32 now.
2. Current status and coverage of total number of data products A) Volume and coverage of available data products		Early 2021 the new EMODnet DTM 2020 has been released, which has been made available for downloading in DTM tiles and with 8 different formats. Moreover, 45+ HR-DTMs have been released on top of the existing 200+ as part of the 2020 release. The next new products release is expected by end 2022; while additional CDTMs are expected in 2021.
B) Usage of data products in this quarter		Still a large volume of downloads, both in numbers (> 10.000) as in volume (> 1 TerraByte). However, a decrease compared to those numbers in the first quarter of 2021, when the new releases of the EMODnet DTM and HR-DTMs were made available. Also the number of WMS requests is still very large, but lower than previous quarter.

3. Organisations supplying/approached to supply data and data products within this quarter		For CDIs, most population had already been done in the previous quarters as there was an input deadline considering the production of new regional DTMs and new EMODnet DTM which were released in January 2021. The new project has started and data providers are tasked with populating new data sets in the first 9 months.There is already some increase for the Baltic Sea. More increase should become visible in the next quarterly reports.
4. Online 'Web' interfaces to access or view data		No changes
5. Statistics on information volunteered through download forms		Bathymetry is used by all sectors and for many applications as it provides basis information. A lot of users do not give details about themselves, unless they use Marine-ID in the download forms.
6. Published use cases		EMODnet Bathymetry has a steady number of use cases which all receive attention from users
8.1. Technical monitoring		The portal has a very good and stable response time and overall a very good up time (100%).
8.2. Portal user-friendliness (Visual harmonization score)		Nearly 100% score; only a minor remark.
9. Visibility & Analytics for web pages		As expected and targeted, the pages related to the "EMODnet bathymetry viewing and Download Service" have the highest score and this traffic is very stable, like also other sections and services. This means that users spent the most time browsing and interacting with the viewing service which as many functions and overall is the most interesting product and service that EMODnet Bathymetry has to offer. From there, users also undertake

		downloading of DTM tiles which has a continuous high score of circa 8000 – 10000 downloaded DTM files per quarter.
10. Visibility & Analytics for web sections		This indicator shows the interest of users for specific sections of the website, excluding the Bathymetry Viewing and Download service. The CDI service receives most attention, directly followed by the helpdesk. Although many feedback forms are received through the helpdesk, the numbers of helpdesk should be far lower than the reported page views here, which needs to be validated.
11. Average visit duration for web pages		Average visit duration is erratic, ranging from few seconds to 2:30 minutes. The interpretation of this diagram is complex as it might be interpreted in terms of user's interest but also as difficulty to understand the concept described on the web page.

The monitoring numbers reported as part of the progress monitoring of EMODnet performance are collected through Matomo. In some cases, numbers from other monitoring systems may also be reported (e.g. Awstats, Google Analytics), and if so, must be reported in the table above. Each system uses different technical approaches and therefore has its strengths and shortcomings. Therefore, results are indicative and care should be taken when interpreting absolute numbers or comparing results from different tools. It is often more sensible to consider trends over time collected by the same monitoring tool.

7. Annex: Other documentation attached

Feedback Questions and Aswers

Subject: Re: EMODnet Bathymetry Feedback form
Date: Mon, 12 Apr 2021 15:47:39 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:

Dear …,
Thank you for your interest in EMODnet Bathymetry.
The EMODnet Bathymetry World Base Layer, covering the whole globe, is only available as OGC WMTS and there are no plans for a WMS. Working with the WMTS is quite easy: see examples at: https://portal.emodnet-bathymetry.eu/services/
For the EMODnet DTM of European seas, there is a separate OGC WMS service, in case that geocoverage is sufficient for you.
Hope this helps.
Kind regards,
Dick M.A. Schaap
Technical Coordinator

On 4/12/2021 3:27 PM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	Hi! I'm trying to create a map viewer where I want to load some wms layers al baselayers. I have seen that the baselayer provided in the Tiled WMTS service is not available as a WMS. Do you know if it will be available? Thanks!

Subject: Re: EMODnet Bathymetry Feedback form
Date: Fri, 16 Apr 2021 17:23:12 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:

Dear ….,
Thanks for your interest in EMODnet Bathymetry. The area of interest function is based upon an OGC WCS service and in our case only delivers GeoTiff files and for areas that are not too large. There are no plans for other formats. However, the Download service gives you options to download the DTM in tiles for 8 different formats including NetCDF.
Kind regards,
Dick M.A. Schaap
Technical Coordinator

On 4/16/2021 3:12 PM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	Hello, I was trying to download Bathymetry data using the "area of interest" option but realized the format of download doesn't include NetCDF but that's not the case for "DTM Tiles". I would like to know if this is just a temporary situation and if this format can be made available soon. Regards.

Subject: Re: EMODnet Bathymetry Feedback form
Date: Fri, 16 Apr 2021 18:03:25 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:

Dear ….,

We have DOIs for the main product , the EMODnet DTM, see: https://www.emodnet-bathymetry.eu/data-products/acknowledgement-in-publications

But the HR-DTMs are relatively new and we have no DOIs (yet) for those, but they have landing pages as I gave you:
https://sextant.ifremer.fr/geonetwork/srv/eng/display#/SDN_CPRD_366_14mCV16CelticSeaIreland
https://sextant.ifremer.fr/geonetwork/srv/eng/display#/SDN_CPRD_366_14mIrishSeaWexford
https://sextant.ifremer.fr/geonetwork/srv/eng/display#/SDN_CPRD_366_14mNorthAtlanticOceanDonegal
Kind regards
Dick

On 4/16/2021 5:53 PM, Summers, Gerard wrote:
Hi Dick,
I was wondering was there an academic citation that I could use? There are no instructions as to what way this data is to be cited.
Regards,

From: Dick M.A. Schaap <dick@maris.nl>
Sent: 16 April 2021 16:51
To:
Subject: Re: EMODnet Bathymetry Feedback form
Dear ..,
Thank you for your interest in EMODnet Bathymetry. Please refer as follows:
"Use was made of High Resolution DTM files from the Geological Survey Ireland with IDs: 366_HRDTM_14m_CV16_CelticSea_Ireland; 366_HRDTM_14m_IrishSea_Wexford; 366_HRDTM_14m_NorthAtlanticOcean_Donegal. These resources were generated and made available in the framework of EMODnet Bathymetry as part of European Marine Observation and Data Network (EMODnet) which is financed by the European Union under Regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund."
More info:
https://sextant.ifremer.fr/geonetwork/srv/eng/display#/SDN_CPRD_366_14mCV16CelticSeaIreland
https://sextant.ifremer.fr/geonetwork/srv/eng/display#/SDN_CPRD_366_14mIrishSeaWexford
https://sextant.ifremer.fr/geonetwork/srv/eng/display#/SDN_CPRD_366_14mNorthAtlanticOceanDonegal
Kind regards,
Dick M.A. Schaap
Technical Coordinator

On 4/16/2021 4:10 PM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	Hi, I have downloaded the following datasets and would like to reference the data for a paper: CV16 CelticSeaIreland 14m HRDTM IrishSeaWexford 14m 366_NorthAtlanticOceanDonegal What citation would you like me to use. Regards,

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Subject: Re: EMODnet Bathymetry Feedback form
Date: Sat, 17 Apr 2021 18:33:57 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:
Dear ..,
Thank you for your interest in EMODnet Bathymetry. Concerning your question:you can get an estimate of the depth for the RGB GeoTiff by looking at the legend in the navigation menu the map viewer portal. There is no exact relationship between the colours and the depths Because of the hillshading in the RGB tiffs. If you wish to know the exact depth you have to download a different file format (e.g. Esri ASCII grid). The Esri ASCII grid can be read by all major GIS software packages.

Hope this helps.

Kind regards,
Dick M.A. Schaap
Technical Coordinator

On 4/16/2021 6:42 PM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	I downloaded the bathymetry map for the coasts of Bizerte in Tunisia in a GeoTIFF file format but I can't find the legend. Would you mind telling me how to extract the legend so I can be able to read the water depths of my region.

Subject: Re: EMODnet Bathymetry Feedback form
Date: Mon, 19 Apr 2021 16:50:03 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:
Dear ..,
Thank you for your interest in EMODnet Bathymetry. Concerning your question, the EMODnet DTM 2020 version is available in 8 formats, of which one is with MSL vertical reference. You can select and download these through the Bathymetry Viewing and Download service at:
https://portal.emodnet-bathymetry.eu
It is very intuitive, but else check HELP at: https://portal.emodnet-bathymetry.eu/help/help.html
Kind regards,
Dick M.A. Schaap
Technical Coordinator

On 4/19/2021 4:35 PM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	Hi, Are there plans to have the 2020 version of the emodnet bathy also available wrt MSL, like the 2018 version? That would make the product much more useful in wave- and flow modelling studies. Kind regards,

---

Subject: EMODnet Bathymetry Feedback form
Date: Fri, 21 May 2021 08:17:43 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:
Dear ..,

We analyzed the issue further and believe it is caused by an incorrect conversion between our (internal) NetCDF format and Esri ASCII grids. Somewhere in the conversion process the “pixel representation” flag is interpreted incorrectly causing “pixel is area” to become “pixel is point”. This is only present in the MSL files. We will correct this but need a few weeks to do the job. We will inform you when this is done.
Thank you for identifying this issue and alerting us.

Kind regards,
Dick

Subject: RE: EMODnet Bathymetry Feedback form (number 456)
Date: Tue, 4 May 2021 10:58:34 +0000

From:
To: 'Dick M.A. Schaap' <dick@maris.nl>
Dear Dick,
Thank you for the quick reply!!
I have subtracted the [D4]_2020.nc from [D4]_MSL_2020.asc for [D4,D5,E4,E5]
Then you see the discrepancies in the values – seems there was an update which was not referenced properly to MSL...

Kind regards,

From: Dick M.A. Schaap <dick@maris.nl>
Sent: 04 May 2021 12:40
To:
Subject: EMODnet Bathymetry Feedback form
Dear ..,
Thank you for your interest in EMODnet Bathymetry. Please provide me with your PDF so that I can share and discuss it with my colleagues who were in charge of the MSL - LAT conversion and the EMODnet DTM for the Channel area.
Will await your PDF.
Kind regards,
Dick M. A. Schaap
Technical Coordinator

On 5/4/2021 10:32 AM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	Dear helpdesk, Concerning Emodnet 2020 bathymetry I noticed that when substracting the MSL from the LAT bathymetry (2020), there are erroneous values in the English channel. Especially around dover and Calais this is a problem concering our use in flow modelling - we need to have this cross profile right! Kind regards,(Svasek Hydraulics) Could you please provide me a email where I can send a PDF plot from where this can be clearly seen

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Subject:EMODnet Bathymetry Feedback form
Date: Wed, 12 May 2021 17:06:46 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:
Dear …,
Thank you for your interest in EMODnet Bathymetry.
EMODnet is using a geographic lat/lon projection based on the WGS84 ellipsoid. There are various options to convert the EMODnet grids from the non-projected lat lon degree system to a projected grid for use in CIVIL 3D. The open source GIS system QGIS is a good option but may have a bit a steep learning curve if you have never used it before. You can download it from:
https://qgis.org/en/site/forusers/download.html
You should be aware though that converting a geographic grid to UTM grid (or vice versa) may result in a non-regularly spaced grid depending on the conversion method used.
Another option you may try is GlobalMapper. Although not freeware, they have a demo version that allows you to do most things for a limited time period. There are a few limitations but you should be able to convert the data. You can get it from here:
https://www.bluemarblegeo.com/trial.php
GlobalMapper is more intuitive than QGIS and if you simply import the Esri ASCII files we have available in the EMODnet portal or use a Geotiff from the area of interest download option you use the "Tools – Configure" menu to change the projection. You can then export the data via the "file – export" menu to a regular grid in different formats.
Kind regards

Dick M.A. Schaap
Technical Coordinator

On 5/12/2021 4:55 AM, noreply@maris.nl wrote:

Name:	
Emailaddress:	
Feedback:	Hi, I have downloaded the .asc data for an area on the coast of Galicia, Spain. I am trying to create a surface in CIVIL 3D and I would like to know which coordinate system should I be using on my dwg. Using the ED50 Zone 29 doesn´t draw the surface in the correct spot. Thank you for your time.

Subject: Re: EMODnet Bathymetry Feedback form
Date: Fri, 14 May 2021 09:07:47 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:
Dear ..,
Thanks for your interest in EMODnet Bathymetry.
The Vertical Reference of the HR-DTM is Lowest Astronomical Tide (LAT) which is used by the National Hydrographic Services.
Kind regards
Dick M.A. Schaap
Technical Coordinator

On 5/12/2021 6:06 PM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	To whom it may concern, I am a PhD student from the University of Algarve (Portugal) and for my research I am using the high-resolution bathymetry data downloaded from EMODnet Bathymetry Portal in the North of Germant (1850 HRDTM Jade). I couldn't find the Vertical Datum of the Digital Terrein Model in the metadata file, could you please provide me this information? Thanking you in advance for any help you can provide, Kind Regards,

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Subject: Re: EMODnet Bathymetry Feedback form
Date: Fri, 21 May 2021 09:03:11 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:
Dear …,.
Thank you for your interest in EMODnet Bathymetry.
Concerning your question: Unit of the cell size is in decimal degrees. The EMODnet DTM is not projected and represented in latitudes and longitudes relative to the WGS84 ellipsoid. If you require Northing and Easting for your work you have to use a GIS to convert (non projected) geographic coordinates to Northing and Easting in the projection you require.

Kind regards,
Dick M.A. Schaap
Technical Coordinator

On 5/20/2021 5:46 PM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	Hi, I dont understand the ESRI format Data export. I have : XLLCORNER 33.60712861860266 YLLCORNER 31.522896642151053 CELLSIZE 0.0010416666700000035 How can I convert XLLCORNER & YLLCORNER in northing and easting ? What is the unit of the Cell size ? Thanks

Subject: Re: EMODnet Bathymetry Feedback form
Date: Tue, 25 May 2021 12:36:22 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:

Dear ….,
Thanks for your interest in EMODnet Bathymetry. Concerning your question: EMODnet Bathymetry has an OGC WFS service for Isobaths. See: https://portal.emodnet-bathymetry.eu/services/ where this is explained.
However, these are highly generalized Isobaths for the complete EMODnet area. The interval starts at 50 meters and continues with 100, 200, 500, 1000, 2000, 5000. The EMODnet resolution of 1/16 arc minute is not really suitable for more detailed Isobaths.
So maybe, you may try the United Kingdom Hydrographic office. At least I know that some Hydrographic Offices provide isobaths upon request.
Kind regards,
Dick M.A. Schaap
Technical Coordinator

On 5/23/2021 12:48 PM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	hello, I am an offshore surveyor and I wanted to download isobaths from Humber Approaches, Block 2 ; in dxf for example, how is it possible to do that?

Subject: Re: EMODnet Bathymetry Feedback form
Date: Mon, 28 Jun 2021 10:18:34 +0200
From: Dick M.A. Schaap <dick@maris.nl>
To:

Dear …,
Thanks for your interest in EMODnet Bathymetry.
You can check the origin of EMODnet Bathymetry data sets as follows:
Go to: https://www.emodnet-bathymetry.eu/
Click in image: Survey Data Sets
Click in side menu on: CDI Data Discovery & Access service
Click on: SEARCH
This gives CDI metadata on all bathymetry data sets
Then click on: SUMMARY
And: Export Summary
Gives you a CSV summary of details of all Bathymetry survey data sets, including their data centres and data originators.
Kind regards
Dick M.A. Schaap
Technical Coordinator

6/25/2021 6:13 PM, noreply@maris.nl wrote:

Name	
Email	
Feedback / Question	Hello, can you please help me locate specific datasets or layers that have been provided by partners in the hydrocarbon sector? Thank you,

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